

## PRECIPITATION OF CuO BY MEANS OF ChTR ON CuO/SiO<sub>2</sub> NANOCOMPOSITE PREPARED BY SOL-GEL PROCEDURE

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As was apparent after analysis of the literature data the mechanical, physical and chemical properties of compounds obtained by the sol-gel method allow using them for the purpose in many spheres. In this investigation the raw materials consist of tetraethyl ortho-silicate (TEOS) (Fluka, 98%), ethanol absolute (EtOH) (Merck), copper nitrate tri-hydrated (Merck), as an initial solution and HNO<sub>3</sub> (Merck, 65%), CH<sub>3</sub>COOH (Merck, 99-100%) as catalysts. Pursuant to modern notions, the catalytic action efficiency greatly increases, when the active compound is precipitated on the substrate in the form of nano-size particles. This can be done by precipitating an active material on the substrate surface by means of ChTR. It was established that the samples of CuO/SiO<sub>2</sub> catalyst with 10 wt.% of CuO obtained by Sol-Gel procedure shows the best results in the reactions of N<sub>2</sub>O decomposition. In this case, using a high temperature ChTR is not expedient, as in these conditions the substrate used by us undergoes irreversible structural modifications. As our investigations of recent years show, suchlike difficulties are overcome using low temperature ChTR. Obtained catalysts were modified through low temperature ChTR by means of free CuO particles. Chemical transportation of copper oxide was carried out by means of hydrogen peroxide vapors. Activeness of modified catalysts was investigated in case of samples processed at 673K and 873K in N<sub>2</sub>O decomposition reaction. It was shown that insignificant quantity (0.01%) of free CuO precipitated on CuO/SiO<sub>2</sub> nanocomposite by means of ChTR results in abrupt increase of N<sub>2</sub>O decomposition reaction rate.

This result shows the efficiency of the activeness of catalysts obtained by Sol-Gel procedure through low temperature ChTR.